

Electronic Appendix

Validation of Volumetric Measurements on Slab Radiographs

Our method of measuring the true volume of osteolytic lesions on the slab radiographs was validated by embedding a block of polymethylmethacrylate of known volume into the clear polymethylmethacrylate used to embed specimens. The specimens with the embedded block of polymethylmethacrylate were then sectioned at 3-mm intervals. The resulting slabs were radiographed, scanned, and measured with use of the same protocol employed for the embedded retrieved specimens. Our validation model had an average error of 0.4% ± 4.2% (range, −5.42% to 5.8%) and 0.03 ± 0.1 mm$^3$ (range, −0.1 mm$^3$ to 0.1 mm$^3$). Linear regression resulted in an $r^2$ value of 0.998, a slope of 1.04 mm$^3$, an intercept of −0.0962 mm$^3$, and a $p$ value of 0, indicating a strong and significant relationship between the volumes measured with the Martell method and the actual volumes.